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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,368	11/03/2003	Akio Nishiyama	F03-161820M/NY	9407
21254 7590 05/16/2007 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			EXAMINER TORRES, JOSE	
			ART UNIT 2624	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/698,368	<b>Applicant(s)</b> NISHIYAMA, AKIO	
	<b>Examiner</b> Jose M. Torres	<b>Art Unit</b> 2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 March 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/12/2007</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Comments*

1. The Amendment filed on March 28, 2007 have been entered and made of record.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 8-15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Yovanof et al. (U.S. Pat. No. 5,677,689).

Re claim 1: Yovanof et al. disclose an image compression method for compressing image data (Col. 4 lines 45-64), comprising: storing compression characteristics data indicating compression characteristics of plural types ("test images", "indoor and outdoor scenes") of images in advance (Information of FIG. 2A of the mathematical model during the calibration phase, Col. 5 lines 28-50); acquiring an initial compression parameter ("predetermined initial Q-factor  $Q_{init}$ " Col. 5 lines 28-39); acquiring a corrective compression parameter ( $\left(\frac{Q_{init}}{Q_{New}}\right)$ ); and performing a compression process ("VLC coding") on image data of an image to be compressed based on one of the initial compression parameter and

the corrective compression parameter (Col. 7 lines 48-60), wherein the compression characteristics indicate a relationship between a bit rate ("target ratio"), which is a ratio between data volume and the number of pixels of image data, and a compression parameter ("Q-factor") associated with image quality (No visible artifacts.) and compression rate of the compression process (Col. 5 lines 28-50), wherein said acquiring an initial compression parameter acquires the initial compression parameter based on compression characteristics data of an average image and a target bit rate (Initial Q-factor experimentally obtained that yields target ratio from the tests images. Col. 5 lines 28-50), and wherein said acquiring said corrective compression parameter includes: acquiring information indicating complexity of the image to be compressed on the bit rate of compressed image data acquired in performing said compression process (The new Q-factor is dependant upon an activity metric which is based on the complexity of the image. Col. 4 line 65 through Col. 5 line 14 and Col. 7 lines 32-60) a compression parameter used in said performing said compression process and the compression characteristics data; and acquiring the corrective compression parameter based on compression characteristics data of an image having the complexity and the target bit rate (The factor  $\left(\frac{Q_{init}}{Q_{New}}\right)$  depends on the initial Q-factor and the new Q-factor which are calculated based upon the activity metric and the target ratio. Col. 4 line 65 through Col. 5 lines 14 and Col. 7 lines 32-60).

Re claim 2: Yovanof et al. disclose the compression process comprises a compression process based on Joint Photometric Experts Group (JPEG) standard, and wherein the compression parameter comprises a Q-value (Col. 5 lines 15-27).

Re claim 3: Yovanof et al. disclose an image compression apparatus ("apparatus") for compressing image data (Col. 4 lines 45-64), comprising: a compression characteristics storing section for storing compression characteristics data indicating compression characteristics of plural types of images (During calibration phase a representative set of test images are processed with the JPEG algorithm to obtain their respective Q-factor, which are stored in a table, and activity metric A. Col. 5 lines 28-50); and a compression process section ("JPEG processor") for performing a compression process on image data of an image to be compressed ("VLC process", Col. 8 lines 23-39 and 50-63), wherein the compression characteristics indicate a relationship between a bit rate, which is a ratio between data volume and the number of pixels of image data, and a compression parameter associated with image quality and compression rate of the compression process (The Q-factor and the activity metric are based on a target compression ratio, and the complexity of the image which are obtained in the calibration phase for different types of images. Col. 5 line 28 through Col. 6 lines 4), wherein the compression process section includes a compression parameter acquisition unit (Developing the mathematical model

within the image capturing device.) for acquiring an initial compression parameter ( $Q_{init}$ ) and a corrective compression parameter ( $\left(\frac{Q_{init}}{Q_{New}}\right)$ ), and a compression process performing unit for performing the compression process based on one of the initial compression parameter and or the corrective compression parameter (The VLC process uses the adjusted DCT coefficients which are obtained using the initial and the newly estimated Q-factor. Col. 8 lines 50-63), wherein the compression parameter acquisition unit acquires the initial compression parameter based on compression characteristics data of an average image ("test images") and a target bit rate and acquires the corrective compression parameter based on information indicating complexity of the image to be compressed (The newly estimated Q-factor  $Q_{New}$  is based on the activity metric which depends upon the complexity of the image.), the compression characteristics data of an image having the complexity, and the target bit rate (Also, when activity metric is measured, it uses the function relating Q-factor which specifies the target ratio. Col. 5 line 28 through Col. 6 line 4 and Col. 8 lines 50-63); and wherein the compression process section estimates the complexity of the image to be compressed based on the bit rate of compressed image data acquired by the compression process (Testing of output **424** to see if it meets target ratio.), compression parameters used at the compression process, and the compression characteristics data (Col. 8 lines 24-63).

Re claim 4: Yovanof et al. disclose the compression process comprises a compression process based on Joint Photographic Experts Group (JPEG) standard, and wherein the compression parameter comprises a Q-value (Col. 5 lines 15-27).

Re claim 5: Yovanof et al. disclose an image compression apparatus for compressing image data (See claim 3 above.).

Re claim 6: Yovanof et al. disclose said compression process comprises at least one of a discrete cosine transform process, a quantization process, and a Huffman coding process (Col. 6 line 60 through Col. 7 line 7).

Re claim 8: Yovanof et al. disclose determining said compression characteristics by: performing a compression process on sample image data for a sample image using a predetermine compression parameter, to acquire a bit rate from a data volume of compressed sample image data and the number of pixels of said sample image (During calibration phase a set of test images are processed with the JPEG algorithm at a predetermined Q-factor, therefore obtaining the compression ratio for the images. Col. 5 lines 15-50).

Re claim 9: Yovanof et al. disclose repeating said compression process on said sample image data plural times using different compression parameters (The image set is processed with different Q-factors. Col. 5 lines 28-40).

Re claim 10: Yovanof et al. disclose said sample image data comprises plural sample images of varying complexity ("indoor and outdoor scenes", Col. 5 lines 41-50).

Re claim 11: Yovanof et al. disclose said storing compression characteristics comprises storing said compression characteristics in one of a table and a function for approximating said compression characteristics (FIG. 2B, "2nd-degree polynomial function", Col. 5 line 28 through Col. 6 line 11).

Re claim 12: Yovanof et al. disclose acquiring said target bit rate from a number of pixels of said image data of said image to be compressed and a target data volume of compressed image data (The target ratio is associated with the pixels that represents the image and the compressed image which corresponds to the file size generated. Col. 5 line 28 through Col. 6 line 4).

Re claim 13: Yovanof et al. disclose acquiring data volume of said compressed image data generated by the compression process (The size of the compressed image generated of output **424**. Col. 8 lines 40-49).

Re claim 14: Yovanof et al. disclose judging whether said acquired data volume is within range of limitation ("the output **424** is tested to see if it meets the target ratio.", Col. 8 lines 40-49).

Re claim 15: Yovanof et al. disclose if said acquired data volume is within said range of limitation, terminating said compression process ("If the target ratio is met **455**, the second pass is not performed", Col. 8 lines 40-49).

Re claim 18: Yovanof et al. disclose a digital camera comprising the image compression apparatus according to claim 5 ("KODAK DCS200 digital camera", Col. 8 line 64 through Col. 9 line 2).

***Claim Rejections - 35 USC § 103***

4. Claims 7, 16, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yovanof et al. in view of Kuniba (US 6,697,529). The teachings of Yovanof et al. have been discussed above.

As to claim 7, Yovanof et al. does not explicitly disclose said Q-value comprises a variable between 0 and 1, and image quality of a compressed image formed by said compressed image data is improved by increasing said Q-value.

Kuniba teaches said Q-value ("initial scale factor ISF") comprises a variable between 0 and 1 ("0.1, 0.3 and 1.0"), and image quality of a compressed image formed by said compressed image data is improved by increasing said Q-value (As can be

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shown the ISF values is between 0 and 1, and the amount of data obtained varying the factor is directly proportional to the scale factor, therefore obtaining more data corresponding to better image quality. FIG. 4 S35, Col. 6 line 63 through Col. 7 line 10).

Therefore, in view of Kuniba, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yovanof et al.'s method by incorporating the Q-value as a scale factor varying between 0 and 1 and obtaining better image quality as the value increases in order to execute quantization that corresponds to the quality and the content of the input data in a flexible manner (Col. 4 lines 8-23).

As to claim 16, Yovanof et al. does not explicitly disclose if said acquired data volume is other than within said range of limitation, performing said acquiring said corrective compression parameter, said acquiring said corrective compression parameter further comprising: acquiring a bit rate of said compressed image data; acquiring a function that gives said bit rate of said compressed image data for said initial compression parameter with reference to said compression characteristics data; acquiring another compression parameter by using said target bit rate and said acquired function; and repeating said performing said compression process using said another compression parameter and said judging whether said data volume of said compressed image data is within said range of limitation until said data volume of said compressed image data is within said range of limitation.

Kuniba teaches if said acquired data volume is other than within said range of limitation (FIG. 4 S40, Col. 8 lines 23-31), performing said acquiring said corrective compression parameter (FIG. 4 S40 NO, "target scale factor NSF", Col. 7 line 62 through Col. 8 line 31), said acquiring said corrective compression parameter further comprising: acquiring a bit rate of said compressed image data ("code volume ACVdata"); acquiring a function that gives said bit rate of said compressed image data for said initial compression parameter with reference to said compression characteristics data (Equation 4 is used to obtain the code volume relating the scale factor used during compression SF and parameters "a" and "b". Col 6 line 63 through Col. 7 line 10); acquiring another compression parameter ("target scale factor NSF") by using said target bit rate ("target code volume TCV") and said acquired function; and repeating said performing said compression process using said another compression parameter and said judging whether said data volume of said compressed image data is within said range of limitation until said data volume of said compressed image data is within said range of limitation (Col. 7 line 62 through Col. 8 line 34).

Therefore, in view of Kuniba et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yovanof et al.'s method by incorporating the method steps of acquiring a new scale factor if the code volume does not falls within an allowable range further comprising: obtaining the code volume data, using an equation relating the scale factor used and image parameters to determine the code volume generated, determining a new scale factor for compression, and repeating the compression using the new scale factor to satisfy the code volume within range of

limitation condition, in order to reduce the calculation quantity and required length of processing time with a high degree of reliability (Col. 8 lines 35-46).

As to claims 17 and 19, Yovanof et al. does not explicitly disclose a computer comprising the image compression apparatus according to claim 5; an input device for inputting said image data and target data volume for performing said compression process; and an output device for outputting said compressed image data.

Kuniba teaches a computer (FIG. 2, "computer 11") comprising an image compression apparatus (Col. 6 lines 26-37); an input device (FIG. 1, Input Section that comprises input device 13 such as a keyboard, and external apparatus 23 such as an electronic camera.) for inputting said image data and target data volume for performing said compression process; and an output device (FIG. 1, "monitor 19") for outputting said compressed image data (The keyboard is used by the developer to input the information such as the target compression rate desired, the electronic camera to input the image data, and the monitor to output the compressed image. Col. 6 lines 26-37).

Therefore, in view of Kuniba, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yovanof et al.'s apparatus by incorporating an input device, such as a keyboard and a electronic camera, for inputting image data and target data volume, an output device, such as a monitor, for outputting said compressed image data, and incorporating the compression apparatus in a computer in order to execute the compression process, which could be installed form a CD ROM, and can be implemented in more than one computer (Col. 6 lines 26-45).

***Response to Arguments***

**Comments**

5. The Specification has been amended to further define the term JPEG, and to correct sentence grammar, see Objections to the Specification below. Claims 1-5 have been amended to more particularly point out the invention, and claims 6-19 have been added. Claim 1 rejection under 35 U.S.C. § 102(b) has been traversed on pages 10-13 of the Amendment filed on March 28, 2007. Applicant arguments with respect to claim 1 has been fully considered, but they are not persuasive, see Claim Rejections under 35 U.S.C. § 102 below.

**Objections to the Specification**

6. Paragraph [0001] has been amended to recite "Joint Photographic Experts Group (JPEG)" on line 1 to define the term "JPEG". Therefore, the objection has been removed.

Paragraph [0003] has been amended to recite "range of limitation" on lines 3-4 to correct sentence grammar. Therefore, the objection has been removed.

Paragraph [0019] has been amended to recite "Huffman coding" on line 4 to correct sentence grammar. Therefore, the objection has been removed.

**Claim Rejections under 35 U.S.C. § 102**

7. With respect to claims 1-5 Applicant's arguments filed March 28, 2007 have been fully considered but they are not persuasive for the following reasons.

As to claim 1, Applicant alleges that Yovanof does not teach or suggest acquiring a corrective compression parameter including *"acquiring information indicating complexity of the image to be compressed based on the bit rate of compressed image data acquired in performing said compression process, a compression parameter used in said performing compression process, and the compression characteristics data; and acquiring the corrective compression parameter based on compression characteristics data of an image having the complexity an the target bit rate"*, as recited in pages 11-12 of the Amendment. Examiner respectfully disagrees. In Yovanof Col. 4 line 65 through Col. 5 line 14 is disclosed an "activity metric" which is a measure of the complexity of the electronic image. Furthermore in the second embodiment disclosed in Col. 8 lines 8-63 a newly estimated Q-factor is used to process the image to meet the target ratio. It should be noted that the Q-factor is related to the quality of the compressed image and the compression ratio as recited in Col. 5 lines 28-39. Therefore, the corrective compression parameter that in this case is the factor  $\left( \frac{Q_{init}}{Q_{New}} \right)$  is based on the activity metric and the initial Q-factor.

Yovanof further teaches a calibration phase that use a mathematical formula relating the activity metric and the Q-factor used during a JPEG algorithm process, which finds an initial Q-factor yielding the target ratio and does not introduce any visible artifacts in Col. 5 lines 28-50. Therefore, a relationship between the bit rate and the compression parameter exists in Yovanof because different compression rates are obtained with different Q-factor during calibration.

As for acquiring the initial compression parameter ( $Q_{init}$ ) it is clearly disclosed in Col. 5 lines 28-39 that this value is obtained experimentally, based on the image quality ("Q-factor that does not introduce any visible artifacts") and the activity metric. As can be shown in FIG. 2A the initial Q-factor is obtained based on the characteristics and the behavior modeled with the polynomial function relating the activity metric. Therefor, an initial compression parameter is obtained.

As for acquiring a corrective parameter based upon a target bit rate, the embodiment disclosed in Col. 8 lines 1-63, the newly estimated value  $Q_{New}$  corresponds to a coarser quantization step, which is calculated when the target ratio of the compressed image is not met. The newly estimated Q-factor is dependant upon the activity metric, as recited in Col. 7 lines 32-45, and since the activity metric is dependant upon the initial Q-factor (Equation 2), this value is chosen so as to yield the target ratio (Col. 5 lines 28-39), therefore the newly estimated Q-factor depends on the target ratio.

Furthermore, Applicant alleges that Yovanof does not teach or suggest acquiring information indicating complexity of the image to be compressed based on the bit rate of compressed image data acquired in performing the compression process, compression parameter used in the performing the compression process, and the compression characteristics data, and acquiring the corrective compression parameter based on compression characteristics data of an image having the complexity and the target bit rate, as recited in pages 12-13 of the Amendment. Examiner respectfully disagrees. During the second pass of Yovanof's embodiment of FIG. 4A, the newly estimated Q-factor is calculated. As stated above, this value is dependant upon the activity metric of

the image, which is a measure of its complexity (Col. 4 line 65 through Col. 5 line 14).

Since this second pass is responsive to the target ratio test, the initial Q-factor was previously used to compress the image, target ratio and the complexity of the image being processed are being used for acquiring the information for the acquisition of the corrective compression parameter.

In addition, Applicant alleges that Yovanof states that an output **424** can be tested and if the target compression ratio for that output **424** is not met, that same output **424** may be further compressed, and that this is completely different from the claimed invention, as recited in page 13 of the Amendment. The second VLC process, disclosed by Yovanof in Col. 8 lines 50-63, is not performed on an already compressed image. Before the second VLC process resulting in a final JPEG compliant compressed image, an inverse VLC process is done on the compressed image by the first pass. After the inverse VLC process is performed the corresponding newly estimated Q-value is determined based on quality and target ratio as stated above. The information obtained by the inverse VLC process still corresponds to the original image information data since only DCT and Quantization processing has been performed before coding and then inverse decoding the image. Therefore, the complexity of this original image is measured using the activity metric, which depends upon the quantized coefficients obtained during partial JPEG processing.

Applicant asserts that Yovanof discloses in Col. 8 lines 52-53 that the newly estimated Q-factor is provided by a mathematical model relating the activity metric to the Q-factor. It should be noted that the activity metric is concerned with the complexity of

the image, as stated in Col. 5 lines 3-5, and this value is used to determine the newly estimated Q-factor. Applicant further asserts that Yovanof is using the "newly estimated Q-factor" to further compress the compressed output **424** in page 13. Examiner respectfully disagrees, since the further processing of the compressed output **424**, does not correspond to a compression of a previously compressed image. Instead the further processing of the compressed output **424** consists of an inverse VLC process, adjusting the quantized DCT coefficients with the newly estimated Q-factor and then coding these adjusted coefficients by a VLC process as stated in Col. 8 lines 50-63.

Finally, Applicant alleges that the newly estimated Q-factor is provided based on a target bit rate, as recited in page 13. As discussed above, determining the newly estimated Q-factor does indeed relates the target ratio. In addition, the term "bit rate", as defined by applicant, may be a ratio between data volume and the number of pixels of image data. This kind of language is well known in the art being expressed as a ratio of two amounts. The compression ratio disclosed in Yovanof corresponds to that defined by applicant, because an image is composed of pixels and the compressed output is measured in data volume, e.g. 6MB, therefore a relationship between the data volume and number of pixels inherently exists when the term compression ratio is used.

As stated above, the method and apparatus is related to the claimed invention, therefore the rejections are maintained.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kuniba et al. disclose an Electronic Camera and Image Processing Program, Bruna et al. disclose a Method of Compressing Digital Images, and Farkash et al. disclose an Image Compression Coder Having Improved Scale Factor Control.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

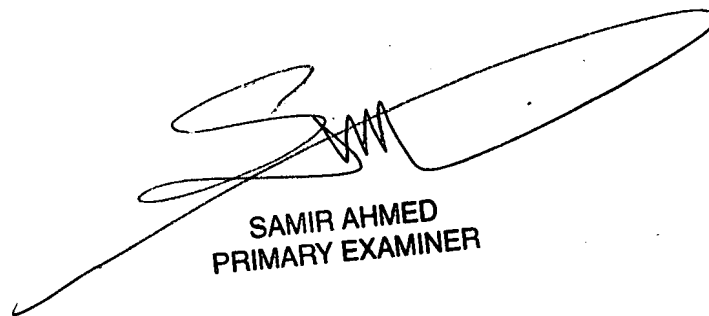
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose M. Torres whose telephone number is 571-270-1356. The examiner can normally be reached on Monday thru Friday: 8:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMT  
05/11/2007



SAMIR AHMED  
PRIMARY EXAMINER